PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 6/W32645WO	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/GB 03/02074	International filing date *(day/month/year)* 15.05.2003	Priority date *(day/month/year)* 13.06.2002

International Patent Classification (IPC) or both national classification and IPC
H04L12/56

Applicant
VODAFONE GROUP PLC et al.

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 6 sheets.

3. This report contains indications relating to the following items:

   I   ☒   Basis of the opinion

   II   ☐   Priority

   III   ☐   Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

   IV   ☐   Lack of unity of invention

   V   ☒   Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   VI   ☐   Certain documents cited

   VII   ☐   Certain defects in the international application

   VIII   ☐   Certain observations on the international application

Date of submission of the demand 23.12.2003	Date of completion of this report 02.07.2004

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preliminary examining authority:
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I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)):*

Description, Pages

1-22	as originally filed

Claims, Numbers

2-15, 17-29	as originally filed
1, 16	received on 24.05.2004 with letter of 17.05.2004

Drawings, Sheets

1/4-4/4	as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description,   pages:

   ☐ the claims,   Nos.:

   ☐ the drawings,   sheets:

≥n established as if (some of) the amendments had not been made, since they have
  go beyond the disclosure as filed (Rule 70.2(c)).

≡*heet containing such amendments must be referred to under item 1 and annexed to this*

, if necessary:

⌐nder Article 35(2) with regard to novelty, inventive step or industrial applicability;
⁻ions supporting such statement

		Yes:	Claims	1-29
		No:	Claims	
		Yes:	Claims	1-29
		No:	Claims	
A)		Yes:	Claims	1-29
		No:	Claims	

⊃ns

5. ☐   This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-29
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-29
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-29
	No:	Claims	

2. Citations and explanations

   see separate sheet

Re Item V
Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The invention of claim 1 relates to a network including a plurality of devices being capable of wireless communications with the other devices, and administration means.

Such a method is disclosed in:

D1:　WO 00/72506 A (IBM UK ;IBM (US)) 30 November 2000 (2000-11-30)

In the network disclosed in D1, wireless devices establish peer-to-peer communications.

The problem is to enable a wireless device not to just have peer-to-peer communications, but to selectively share resources with three or more devices forming a domain.

This is done by having administration means maintaining a store indicating the resources available for sharing between respective devices within the domain and to provide these devices with data to enable selective sharing of resources.

This is neither disclosed nor rendered obvious by the available prior art. The subject-matter of claim 1 is therefore novel and considered to involve an inventive step (Article 33(2) and 33(3) PCT). The subject-matter of claim 1 is also industrially applicable.

The same applies to claim 16 which describes the same features as in claim 1 but in terms of "method". Claim 16, therefore, equally meet the requirements of Article 33 PCT.

Dependent claims 2-15 and 17-29 relate to further implementing details of the invention defined in claims 1 and 16 to which they refer and are thus equally novel, inventive and industrially applicable (Article 33 PCT).

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CLAIMS

1.   A network (11) including a plurality of devices (A...F;18,30,32), each

device being capable of wireless communication with the other devices of the

5   network, at least some of said devices having one or more resources for sharing

with the other devices of the network, the network including administration

means for allowing selected devices (A,B,C;DE;BCE;18,30,32) to be associated

within a domain (13;15;17;19) including at least three of said devices by

providing each device (A,B,C;DE;BCE;18,30,32) with identification data, the

10   identification data of each device (A,B,C;DE;BCE;18,30,32) being interpretable

by each other device (A,B,C;DE;BCE;18,30,32) within the domain

(13;15;17;19), particular modes of communication only being allowed between

devices (A,B,C;DE;BCE;18,30,32) within the domain (13;15;17;19) having such

identification data, the administration means including means for selectively

15   enabling sharing of said resources between the devices within the domain (19)

and which is operable to maintain a store indicating the resources available for

sharing between respective devices within the domain (18) and to provide these

devices with data to enable selective sharing of resources.

2. 20   2.   The network of claim 1, wherein the identification data received from the

administration means includes a key (KPSD).

3.   The network of claim 2, wherein the key (KPSD) is a shared key.

AMENDED SHEET

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4.   The network of claim 2, wherein the key (KPSD) is a public key of a public-private key pair, the private key being stored on the administration means.

5.   The network of any one of claims 1 to 4, wherein each device
5   (A,B,C;DE;BCE;18,30,32) has a security certificate associated therewith indicating its membership of the domain (13;15;17;19).

6.   The network of any one of claims 2 to 5, including further keys (KAB,KBC,KCA,KBE,KCE) for allowing encrypted communication between
10   the devices (A,B,C;DE;BCE;18,30,32) within the domain (13;15;17;19).

7.   The network of any one of claims 1 to 6, wherein the administration means transmits to each device (A,B,C;DE;BCE;18,30,32) within the domain (13;15;17;19) data indicative of the characteristics of the other devices
15   (A,B,C;DE;BCE;18,30,32) within the domain (13;15;17;19).

8.   The network of any one of claims 1 to 7, wherein the administration means is transferable form one device to another.

20 9.   The network of any one of claims 1 to 7, wherein a plurality of devices within the domain (13;15;17;19) include administration means, and means is provided to selectively enable only one of said administration means at a time.

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10.　The network of any one of claims 1 to 9, including a plurality of said domains (13;15;17;19).

11.　The network of claim 10, wherein a device (B,C,E) is associated with each
5　of said plurality of domains (13;15;17;19).

12.　The network of any one of the preceding claims, wherein at least one of the devices (18) within the domain (19) includes control means (28,34,40) for controlling use of its resources by other devices (30,32) within the domain (19).

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13.　The network of claim 12, wherein the control means (28,34,40) limits access by said other devices (30,32) to only selected ones of said resources.

14.　The network of claim 12 or 13, wherein the control means (28,34,40)
15　limits the amount of use by said other devices (30,32) to said resources.

15.　The network of claim 12, 13 or 14, wherein the control means (28,34,40) prompts the operator of the device (18) making resources available to authorise use of said resources by said other devices (30,32) when a request for use of said
20　resources is received therefrom.

16.　A method allowing selected devices (A...F;18,30,32) within a network (11) to be associated within a domain (13;15;17;19) that includes at least three of

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said devices, each device (A...F;18,30,32) being capable of wireless communication with the other devices (A...F;18,30,32) of the domain and at least some of said devices having one or more resources for sharing with the other devices of the domain, the method including adapting one device (C;18)

5   within the domain (13;15;17;19) to provide each other device (A,B,C;DE;BCE;18,30,32) with identification data, the identification data of each device (A,B,C;DE;BCE;18,30,32) being interpretable by each other device (A,B,C;DE;BCE;18,30,32) within the domain (13;15;17;19), particular modes of communication only being allowed between devices (A,B,C;DE;BCE;18,30,32)

10   within the domain (13;15;17;19) having such identification data, the adapted device (C;18) selectively enabling sharing of said resources between the devices within the domain (19) by maintaining a store indicating the resources available for sharing between respective devices within the domain (19) and providing these devices with data to enable selective sharing of resources.

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17.   The method of claim 16, wherein the identification data includes a key (KPSD).

18.   The method of claim 17, wherein the key (KPSD) is a shared key.

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19.   The method of claim 17, wherein the key (KPSD) is a public key of a public-private key pair, the private key being stored on the adapted device.

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20.   The method of any one of claims 16 to 19, wherein each device (A,B,C;DE;BCE;18,30,32) has a security certificate associated therewith indicating its membership of the domain (13;15;17;19).

5   21.   The method of any one of claims 17 to 20, including providing further keys (KAB,KBC,KCA,KBE,KCE) for allowing encrypted communication between the devices (A,B,C;DE;BCE;18,30,32) within the domain (13;15;17;19).

22.   The method of any one of claims 16 to 21, wherein the adapted device
10   (A,B,C;DE;BCE;18,30,32) transmits to each device (A,B,C;DE;BCE;18,30,32) within the domain (13;15;17;19) data indicative of the characteristics of the other devices (A,B,C;DE;BCE;18,30,32) within the domain (13;15;17;19).

23.   The method of any one of claims 16 to 22, including changing the device
15   within the domain which provides each other device with identification data.

24.   The method of any one of claims 16 to 23, including allowing the formation of a plurality of said domains (13;15;17;19).

20   25.   The method of claim 24, wherein a device (B,C,E) is associated with each of said plurality of domains (13;15;17;19).

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26.   The method of any one of claim 16 to 25, wherein use of the resoures (22,24) of at least one of the devices (18) within the domain (19) by other devices (30,32) in the domain (18) is controlled.

5   27.   The method of claim 26, wherein the control step limits access by said other devices (30,32) to only selected ones of said resources.

28.   The method of claim 26 or 27, wherein the control step limits the amount of use by said other devices (30,32) of said resources.

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29.   The method of claim 26, 27 or 28, wherein the control step prompts the operator of the device (18) making resources available to authorise use of said resources by said other devices (30,32) when a request for use of said resources is received therefrom.

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